

METHOD OF FORMING TANTALUM OXIDE FILM UTILIZING PLASMA ATOMIC LAYER DEPOSITION METHOD

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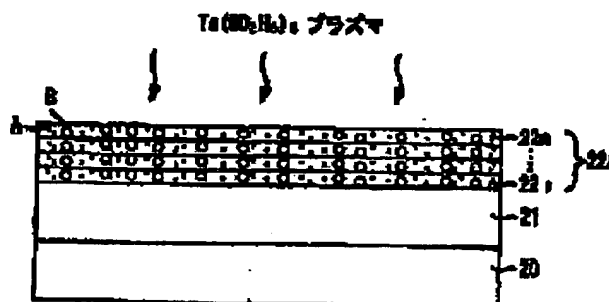
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Abstract of JP2002305195

PROBLEM TO BE SOLVED: To provide a method of forming a tantalum oxide film, utilizing a plasma atomic layer deposition method, by which film quality and electrical characteristics can be improved by forming a tantalum oxide film utilizing the plasma atomic layer. **SOLUTION:** This method comprises a first step of introducing a pentaethoxytantalum ($\text{Ta}(\text{OC}_2\text{H}_5)_5$) source gas into a reaction chamber to generate plasma, a second step of depositing tantalum oxide mono-layers 221- by utilizing the pentaethoxytantalum plasma, a third step of purging the reaction chamber, a fourth step of forming a tantalum oxide film 22 by repeating a cycle of forming the tantalum oxide mono-layers in the first to third steps at least one or more times, a fifth step of subjecting the tantalum oxide film surface to heat treatment under an oxygen atmosphere, and a sixth step of crystallizing the tantalum oxide film.



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